

U.S.S.N 09/836,911
HADLACZKY *et al.*
PRELIMINARY AMENDMENT

IN THE CLAIMS:

Please cancel claims 1-22 without prejudice or disclaimer.

Please add claims 23-60 as follows:

23. (New) A method, comprising:

introducing an artificial chromosome into a nuclear donor cell; and
transferring the nucleus of the nuclear donor cell into an enucleated
recipient cell.

24. (New) The method of claim 23, further comprising transferring the
recipient cell into a maternal host animal.

25. (New) The method of claim 24, wherein the recipient cell has been
activated.

26. (New) The method of claim 24, further comprising permitting the
transferred recipient cell to develop into an animal in the host.

27. (New) The method of claim 23, wherein the enucleated recipient
cell is an oocyte.

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28. (New) The method of claim 23, wherein the nucleus of the nuclear
donor cell is transferred into the recipient cell by fusing the donor and recipient
cells.

29. (New) The method of claim 23, wherein the nucleus of the nuclear
donor cell is transferred into the recipient cell by microinjection.

30. (New) The method of claim 24, wherein the host is selected from
among a cow, goat, mouse, camel, ox, pig and sheep.

31. (New) The method of claim 26, wherein the artificial chromosome
comprises heterologous DNA encoding a gene product.

32. (New) The method of claim 31, wherein the resulting animal
expresses the gene product in its milk.

33. (New) The method of claim 23, wherein the artificial chromosome
is a minichromosome or a satellite artificial chromosome.

34. (New) The method of claim 23, wherein the artificial chromosome
is a satellite artificial chromosome.

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35. (New) The method of claim 34, wherein the artificial chromosome is a satellite artificial chromosome produced by a method comprising:

introducing nucleic acid comprising a selectable marker into a cell;
growing the cell under conditions that selectively permit the growth of cells containing the nucleic acid; and
selecting a cell that comprises a satellite artificial chromosome.

36. (New) The method of claim 23, wherein the artificial chromosome is a minichromosome.

37. (New) The method of claim 36, wherein the artificial chromosome is a minichromosome produced by a method comprising:

introducing nucleic acid comprising a selectable marker into a cell;
growing the cell under conditions that selectively permit the growth of cells containing the nucleic acid; and
selecting a cell that comprises a minichromosome comprising a neocentromere.

38. (New) The method of claim 24, wherein the artificial chromosome is a satellite artificial chromosome.

39. (New) The method of claim 25, wherein the artificial chromosome is a satellite artificial chromosome.

40. (New) The method of claim 26, wherein the artificial chromosome is a satellite artificial chromosome.

41. (New) The method of claim 27, wherein the artificial chromosome is a satellite artificial chromosome.

42. (New) The method of claim 23, wherein the artificial chromosome is introduced into the nuclear donor cell by a method selected from among direct uptake, microinjection, cell fusion, microcell fusion, electroporation, electrofusion, projectile bombardment, calcium phosphate precipitation and lipid-mediated transfer.

43. (New) The method of claim 34, wherein the artificial chromosome is introduced into the nuclear donor cell by a method selected from among direct

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uptake, microinjection, cell fusion, microcell fusion, electroporation, electrofusion, projectile bombardment, calcium phosphate precipitation and lipid-mediated transfer.

44. (New) The method of claim 34, wherein the artificial chromosome is isolated prior to introducing it.

45. (New) The method of claim 23, further comprising culturing the nuclear donor cell comprising the artificial chromosome prior to transfer of the nucleus into the recipient cell.

46. (New) The method of claim 45, wherein the culturing step comprises screening for one or more markers contained within the artificial chromosome.

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47. (New) The method of claim 23, further comprising culturing the recipient cell after transfer of the nuclear donor cell nucleus into the recipient cell.

48. (New) The method of claim 47, wherein the culturing step comprises screening for one or more genetic markers.

49. (New) The method of claim 48, wherein the culturing step comprises screening for one or more markers contained within the artificial chromosome.

50. (New) The method of claim 23, further comprising:
 permitting the recipient cell comprising the nuclear transfer nucleus to develop as an embryo *in vitro* or *in vivo*;
 obtaining a nuclear donor cell from the embryo wherein the cell comprises an artificial chromosome; and
 transferring a nucleus from the embryo nuclear donor cell into a second enucleated recipient cell.

51. (New) The method of claim 50, further comprising transferring the second enucleated recipient cell into a maternal host animal.

52. (New) The method of claim 51, further comprising permitting the transferred second recipient cell to develop into an animal in the host.